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ABSTRACT

Assessment techniques for young severely retarded children are analyzed through identification of skills underlying such common tasks as building with blocks, completing puzzles, and putting pegs in pegboards. Examples are given of four mathematics assessment tasks from a standardized instrument for reasoning and problem solving. Described are the task (such as correctly placing three forms in a formboard), the skill (preclassification), the mathematic implications (perception), and the potential skill deficit (difficulties in counting activities). (CL)

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ASSESSMENT AND TRANING TECHNIQUES FOR DEVELOPING PIAGETIAN SENSORI-MOTOR AND PRE-OPERATIONAL SKILLS IN PRESCHOOL SEVERELY RETARDED CHILDREN

Submitted to:

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Instructional programs for moderately, severely, and profoundly mentally impaired children have been, and, in many instances, still remain, activity-oriented rather than assessment based. "Activities" refers to not only blocks, beads and pegboards, but such things as "show and tell", story time, singing, outdoor play, quiet time, art, and field trips. This type of program can be seen in centers across the nation.

In some centers for the severely retarded, one observes training or in instruction in language, pre-vocational skills, gross motor skills, and academics, such as reading and arithmetic. While observing this instruction, one is immediately aware that all the children are doing, or attempting to do, or are expected to do the same thing. The assumption with this instructional formate as with the previously cited activities is that all the children are at the same level of functioning.

Methods courses in teachers' colleges and in-service workshops for practitioners provide information and on occasion even "hands on" experiences with activities to teach such skills as sorting, matching, folding, labeling, throwing, buttoning, but seldom if ever, provided assessments or training in assessment so as to determine at what level to begin teaching.

Teachers consistently say "We don't have time for assessment, we have to get on with teaching." Undoubtedly their time is limited. But could it be that the problem has a variety of causes:

1. Teachers don't have available to them assessment devices which have been developed in such a way that they are easily administered and scored.
2. Teachers don't have available, information specific to training on the goals established by the previously mentioned assessment.

3. Teachers don't have training in the administration of the assessment devices or in training techniques specific to deficits found on the assessments, or in techniques for working with individual kids in a group session.
4. The relationship between skill assessment, skill deficits, and implications for later learning, is obscure and therefore often not addressed in the flurry of everyday activities.

Summary

The purpose of this article was to provide an analysis of assessment techniques by identifying the skills associated with such common tasks as building with blocks, completing puzzles, putting pegs in a pegboard and other activities in classrooms for young severely retarded children. Also, the authors attempted to focus on the delicate link between assessment, prescription and instruction.

ASSESSMENT AND TRAINING TECHNIQUES FOR DEVELOPING PIAGETIAN SENSORI-MOTOR AND PRE-OPERATIONAL SKILLS IN PRESCHOOL SEVERELY RETARDED CHILDREN

In a recent issue of a leading education journal a delightful cartoon depicts two toddlers pausing from their busy play, amidst blocks, pounding boards and other preschool toys that are strewn about the floor around them. In the cartoon, one of the youngsters is saying ruefully, to the other, "Blocks, beads, peg boards -- they're filling my head with stuff I'll never use!"

So, too, instructional programs for moderately, severely, and profoundly mentally impaired children have been, and, in many instances, still remain, activity-oriented rather than assessment based. "Activities" refers to not only blocks, beads and pegboards, but such things as "show and tell", story time, singing, outdoor play, quiet time, art, and field trips. This type of program can be seen in centers across the nation.

In some centers for the severely retarded, one observes training or instruction in language, pre-vocational skills, gross motor skills, and academics, such as reading and arithmetic. While observing this instruction, one is immediately aware that all the children are doing, or attempting to do, or are expected to do the same thing. The assumption with this instructional format as with the previously cited activities is that all the children are at the same level of functioning.

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3. Teachers don't have training in the administration of the assessment devices or in training techniques specific to deficits found on the assessments, or in techniques for working with individual kids in a group session.
4. The relationship between skill assessment, skill deficits, and implications for later learning, is obscure and therefore often not addressed in the flurry of everyday activities.

The authors' experience in working with severely and profoundly retarded children as well as those in the trainable range indicate that minimum daily program requirements should be established in five areas. These are Language, Self Help Skills, Gross Motor Skills, Prevocational Skills, and Reasoning and Problem Solving (Sensori-Motor Pre-Operational) individual basis.

To this end, assessment devices and training procedures have been devised (Michigan State University, 1975), based on individual instructional goals derived from assessment in the aforementioned curriculum areas. The assessment and training procedures are developmentally sequenced so that the individual instructional needs of severely retarded children can be met.

In this article we will address ourselves only to the area of Reasoning

and Problem Solving Skills (Hecht, 1975).

Therefore, the authors purpose is to focus on the importance of skill assessment, block playing, pounding pegs, etc., and the "stuff" of teaching the handicapped as these activities help develop specific reasoning and problem solving skills. Currently, such identification is obscured by the activity-oriented nature of most programs for severely handicapped children.

To the discerning eye, then, building block towers, putting pegs into peg boards and all the other "stuff" of severely handicapped programs can be justified as being educationally sound and having academic integrity.

The focus of the remainder of this article is identification of skills associated with common activities, how these skills can be assessed, and their relationship to critical higher level skills. For purposes of brevity and illustration, we will consider assessment tasks as they are associated with mathematic skills.

For example, should a child be able to match forms in a form board, he may have difficulty with higher level discrimination skills which are prerequisite to seeing the difference in amounts, lengths and sizes.

The assessment tool (Reasoning and Problem-Solving) that the authors have used is one which was derived from a variety of standardized assessment instruments generally used throughout the country with young children. The items on the instrument are developmentally-sequenced and were chosen because of the skills which they tap. The assessment tasks are, of themselves, irrelevant. However, the skills as represented by the tasks are of critical importance as they serve as the foundation for later learning.

In assessment, we use a variety of objects commonly found in any classroom for young handicapped children. It is not necessary to use expensive and highly complicated, standardized assessment instruments in order to effectively determine

where a child is functioning along the continuum of a partial skill.

Examples of Tasks Utilizing the "Stuff" of Handicapped Classrooms, Skill Being Assessed And The Implications For Later Learning Follow

1. Assessment Task:

Child must correctly place three forms (circle, square, and triangle) in a three-hole formboard.

Assessment Skill:

Pre-classification skills. At this level the child is beginning to form conceptual thought and can discriminate shape and size. This is prerequisite to higher skills which allow the child to discriminate amounts (quantity).

Mathematic Implications:

The form board serves as an example of physical experience but, another type of experience -- logical-mathematical experience -- could also be derived from actions with the objects. For example, suppose the child when given a set of objects ordered them from left to right and then counted them without putting them in the form board.

Piaget (1966) proposes a two-level development of spatial ideas, these being perception and representation. Perception deals with sensory space (vision, grasping, hearing, etc.) while representation is the reconstruction of sensory space at the level of abstract thought.

Skill Deficit:

The handicapped child who does not have this preclassification skill will have difficulty in discriminating amounts which will later be

reflected in difficulties as encountered in other items which

reflected in difficulties as encountered in other items which

reflect the child's inability to carry out meaningful counting activities such as telling time and making change.

2. Assessment Task:

Upon request, child must be able to select and hand the teacher one block from a group of blocks.

Assessment Skill:

Understanding concept of oneness when a child understands this concept he is in the beginning stages of developing number concepts. The child who does not have this concept (oneness) will otherwise have no meaningful counting skills, (i.e. counting by twos, threes, etc.). These skills are also prerequisite to such later skills as telling time, counting money.

Mathematic Implication:

When children are capable of acting on the use of spoken number names in a meaningful way, the reading and writing of numerals can be introduced. The use of the verbal names for sets of objects, such as "one", "two", etc., are the child's first counting experiences.

Skill Deficit:

Child is unable to carry out meaningful counting activities (tell time, make change, etc.).

3. Assessment Task:

Child matches one-dimensional (line-drawing) forms.)

Assessment Skill:

This item illustrates the importance of child's ability to move

from the concrete to the abstract. In other assessment items the child is required to put a 3-dimensional form in a formboard whereas, this item calls for the child to match one-dimensional forms. Therefore, if a child is unable to go from the concrete to the abstract, he will not be able to (1) relate symbols to amounts (numeral 6 to 6 balls); (2) the child will have difficulty in understanding the concept of equal or equivalent. And will have limited ability to use mental symbols in problem-solving.

Mathematic Implications:

During the normal child's early years, he acquires the ability to deal with spatial concepts. Coordination of spatial, number and logical ideas gives rise to the topic of measurement. In dealing with measurement, the child has to contend with continuous objects rather than discrete objects (as in the case of counting). Before quantification can take place, units must be introduced into the objects. For example, in length, a unit must be partitioned off and displaced without overlap or empty intervals. These continuous units also form inclusions, one unit included in two, and so on. This construction is parallel to that of number (seriations and inclusions). These facts suggest the outcome that length concepts tend to lag behind those of number in development (seriations and inclusions).

The development of measurement ideas then in normal and handicapped children should begin as those ideas associated with number, that is, in terms of physical comparisons. The child should become operational with the length relations ("as long as", "shorter than",

and "longer than"). Activities of sorting, seriating, and comparing sticks whould be advised at this level. It is essential that the severely handicapped child have physical opportunities to develop ideas such as those of conservation and transitivity to length.

Skill Deficit:

Child will be unable to sort, seriate, and generably, be unable to understand the meaning of symbols (numerals), or the meaning of equal or equivalent.

3. Assessment Task:

Child must remember the location of a hidden object.

Assessment Skill:

Child's object permanence is fully developed at this stage (child can retain a mental image or recall where an object is hidden). This is the beginning of conservation skills which later becomes the basis for a child being able to conserve volume, length and quantity.

Mathematic Implications:

After the child has accomplished matching and verbal counting, it is necessary to have a deeper understanding of these relationships. An example of deeper understanding would be a child using to alter his judgment concerning comparisons between two sets after a rearrangement or transformation of the sets. Here, the child will not give in to demands made by the perceptual situation. For example, having established collection 'A' to have less than collection 'B' the child will not alter his judgment when collection is spaced so as to be a longer line than 'A'.

Counting by ones is not the most fundamental number skill handicapped children should be able to perform. Prior to counting by ones, the child should be able to compare sets of objects by using the relations of matching ("as many as", fewer than", and "more than") for example given a specific collection of objects, the child should be able to find a set which has more objects, fewer objects, as many objects, one more object, or one fewer object than the given collection. The child can accomplish these tasks by using one-to-one correspondence rather than counting.

Skill Deficit:

A child who can not conserve may fail to see the constancy of amount when the physical arrangement changes. The child needs to be able to see that the number stays the same.

Summary

To recap, the purpose of this article was to provide an analysis of assessment techniques by identifying the skills associated with such common tasks as building with blocks, completing puzzles, putting pegs in a pegboard and other activities in classrooms for young severely retarded children. Also, the authors attempted to focus on the delicate link between assessment, prescription and instruction.

Too often, after we have discovered that the retarded child has a particular skill deficit, we, as teachers of these children set about having the child practice and practice without effectively assessing the nature of the deficit causing the problem. Practice does not make perfect. Skill attainment requires that the components of a skill be task analyzed and subsequently taught in such a way that each step in the process is build on the acquisition of the preceeding

step.

Thus, our belief is that through the approach described in this article, that we as teachers, can in fact ensure that the young severely retarded children in our charge do not become the societal failures of the future.

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